



Des Gillen
President
 BP-Husky Refining LLC
 4001 Cedar Point Road
 Oregon, OH 43616
 P 567.698.4529
 des.gillen@se1.bp.com

City of Toledo
 Division of Environmental Services
 348 S. Erie Street
 Toledo, OH 43604
 Attn.: Peter Park

RE: CMS Summary & Data Assessment Report – 1st Quarter 2022

Dear Sir or Madam:

Attached is the CMS Summary Report and Data Assessment Report for BP-Husky Refining LLC for the period of January 1, 2022 through March 31, 2022.

CMS Summary Report (Attachment A)

A complete list of emissions units and pollutants monitored are in Table 1; Summary Reports are included in Attachment A. Excess Emissions and Monitoring Systems Performance Report is not required under 40 CFR 60.7(d) if the total duration of excess emissions is less than 1% and the CMS downtime is less than 5% of the total operating time for the quarter. Unless where noted in Table 1, these criteria were met for the units listed.

Table 1. Emission Units and Pollutants Monitored

Location/Emission Unit	Parameter	Quarter 1 2022 Downtime (% unit operating time)	Notes
TIU Fuel Gas Mix Drum	H ₂ S in Fuel Gas		
- B015 - Crude 1 Furnace		0.2	
- B017 - Coker 2 Furnace		0.2	
- B019 - Crude Vac 2 Furnace		0.2	
- B022 - Naphtha Treater Furnace		0.2	
- B029 - DHT A-Train Furnace		0.2	
- B030 - BGOT Furnace		0.2	
- B031 - Vac 1 Furnace		0.2	
- B032 - Coker 3 Furnace		0.2	
- B033 - East B-GOT Furnace		0.2	
- B034 – East Alstom Boiler		0.0	
- B035 – West Alstom Boiler		0.2	
- P007 - FCC/CO Boiler		0.2	

CMS Summary & Data Assessment Report – 1Q2022

Location/Emission Unit	Parameter	Quarter 1 2022 Downtime (% unit operating time)	Notes
TIU Fuel Gas Mix Drum			
- B015 - Crude 1 Furnace	Total Sulfur in Fuel Gas	1.2	
- B019 - Crude Vac 2 Furnace		1.2	
- B022 - Naphtha Treater Furnace		1.2	
- B029 - DHT A-Train Furnace		1.2	
- B030 - BGOT Furnace		1.2	
- B031 - Vac 1 Furnace		1.2	
- B032 - Coker 3 Furnace		1.2	
- B033 - East B-GOT Furnace		1.2	
- B034/B035 – East & West Alstom Boilers		1.1	
East Side Fuel Gas Mix Drum			
- B008 - Iso 2 Feed Heater	H ₂ S in Fuel Gas	0.2	
- B009 - Iso 2 Stabilizer Reboiler		0.2	
- B010 - Iso 2 Splitter Reboiler		0.2	
B036 - Reformer 3 Furnace	H ₂ S	0.6	
P003 - East Flare (see note A)	H ₂ S	1.6	
P003 - East Flare	Total Sulfur	2.4	
P004 – West Flare Vent Gas (see note A)	H ₂ S	2.5	
P004 – West Flare “C-Valve” Vent Gas	H ₂ S	0.2	
P004 – West Flare Vent Gas	Total Sulfur	1.5	
P004 – West Flare “C-Valve” Vent Gas	Total Sulfur	1.2	
B036 – Reformer 3 Furnace	NO _x	0.0	
P007 – FCCU/CO Boiler Bypass (see note B)	CO	0.0	>1% EE
P007 – FCCU/CO Boiler Bypass (see note B)	NO _x	0.0	
P007 – FCCU/CO Boiler Bypass (see note B)	SO ₂	0.0	
P007 – CO Boiler Exhaust	CO	0.5	
P007 – CO Boiler Exhaust	NO _x	0.5	>1% EE
P007 – CO Boiler Exhaust	SO ₂	0.5	
P009 - Sulfur Recovery Unit with #1	SO ₂	0.0	
P037 - Sulfur Recovery Units #2 & #3	SO ₂	2.8	>1% EE
B034 – East Alstom Boiler (see note C)	NO _x	0.0	
B035 – West Alstom Boiler (see note C)	NO _x	3.5	

Note A: P003/P004 East & West Flare

The attached H₂S tables identify all emissions in excess of the Subpart Ja H₂S limit of 162 ppm_v on a 3-hour rolling average. If an event did not occur for 3 consecutive hours, then it does not meet the 3-hour averaging requirement and therefore is not considered excess emissions. If a 3-hour event exceeds the 100,000 ppm_v span limit of the H₂S CMS, then the Total Sulfur analyzer data was used for the H₂S value.

Note B: P007 – FCCU/CO Boiler Bypass

The purpose of these CEMS are to continuously monitor the listed (CO, NO_x, & SO₂) emissions from the FCCU Regenerator exhaust in the event of a CO Boiler bypass while there is feed to the FCCU. Otherwise, compliance with the listed limits for the FCCU is determined from continuous emissions monitoring of the CO Boiler Exhaust stack. Although this source is not subject to 40 CFR Part 60, Section C.12.(d)(7) of P0104782 (as set forth by Permits-to-Install 04-01290 and P0105902) requires monitoring per 40 CFR Part 60.11. As

CMS Summary & Data Assessment Report – 1Q2022

noted in Section C.12.(e)(4) of P0104782, the refinery has opted to follow the reporting requirements under 40 CFR 60.7. 40 CFR 60.7(c) requires the submission of an Excess Emissions and Monitoring Systems Performance Report and Summary Report Form.

Note C: B034/B035 East & West Alstom Boiler

The attached data tables include supplemental reporting for NOx CEMS records required by 40CFR49b(i).

Details of all downtime or excess emission incidents are provided in the summary tables in Attachment A.

Data Assessment Report (Attachment B)

In accordance with the terms and conditions of their permits, Attachment B includes the Continuous Emission Monitor (CEM) Data Assessment Report (DAR) for this quarter. Table 2 below is a summary of Cylinder Gas Audits conducted this quarter. Where noted in Table 2, Relative Accuracy Test Audits (RATAs) were conducted this quarter; these reports were submitted previously via Air Services.

Table 2. Cylinder Gas Audit Summary

Location/Emission Unit	Parameter	Notes
East Side Fuel Gas Mix Drum (B008, B009, B010)	H ₂ S	RATA – No CGA
TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007)	H ₂ S	RATA – No CGA
B036 - Reformer 3 Heater H ₂ S CMS	H ₂ S	RATA – No CGA
P003 - East Flare	H ₂ S	RATA – No CGA
P004 - West Flare	H ₂ S	RATA – No CGA
P003 - East Flare (low & high ranges)	Total Sulfur	
P004 - West Flare (low & high ranges)	Total Sulfur	
TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007)	Total Sulfur	RATA – No CGA
B036 - Reformer 3 NOx/O ₂ CEMS	NOx, O ₂	
B034 - East Alstom Boiler	NOx, O ₂	RATA
B035 - West Alstom Boiler	NOx, O ₂	RATA
P007 - FCCU/CO Boiler	SO ₂ , NOx, CO, O ₂	
P007 - FCC Regen Line	SO ₂ , NOx, CO, CO ₂ , O ₂	
P009 - SRU #1	SO ₂ , O ₂	
P037 - SRU #2 & #3 (TRP SRU)	SO ₂ , O ₂	

The DAR also includes out-of-control (OOC) times for the FCCU/CO Boiler CO CEMS, FCC Regen Line CO, O₂, & CO₂ CEMS, the SRU#1 SO₂ & O₂ CEMS, and the TRP SRU SO₂ & O₂ CEMS based on the OOC requirements defined by the MACT general requirements, 40 CFR Part 63.8(c)(7).

CMS Summary & Data Assessment Report – 1Q2022

CEMS calendar tons reporting

In accordance with the Title V permit, Table 3 includes calendar tons per quarter for certain pollutants for Emission units B034, B035, B036, P004, P003, and P007.

Table 3. CEMS Reporting requirement with calendar tons

Page	Citation	EU	Description	Language	Tons
63	B.5.b)(2)b.v	B036	Reformer Heater	Units subject to NSPS Ja NOx monitoring - quarterly reports require "the total NOx emissions for the calendar quarter (tons)" to be included with the quarterly EER for NOx CEMs	6.08
181	c.12.e)(2)b.v	P007	FCCU	Quarterly EER required for SO2 CEM requires "the total SO2 emissions for the calendar quarter (tons)" to be included	155.53
183	c.12.e)(4)b.v	P007	FCCU	Quarterly EER required for NOx CEM requires "the total NOx emissions for the calendar quarter (tons)" to be included	58.91
290	c.20.e)(2)b.v	P037	SRU 2/3	Quarterly EER required for SO2 CEM requires "the total SO2 emissions for the calendar quarter (tons)" to be included	10.58
428	c.36.e)(4)b.v	B034/B035	Alstom Boilers	Quarterly EER required for NOx CEM requires "the total NOx emissions for the calendar quarter (tons)" to be included	7.52
485	c.40.e)(5)b.v	P003/P004	East/West Flare	Quarterly EER required for H2S CEM requires "the total hydrogen sulfide emissions for the calendar quarter (tons)" to be included	0.43
487	c.40.e)(6)b.v	P003/P004	East/West Flare	Quarterly EER required for Total Sulfur CEM requires "the total sulfur emissions for the calendar quarter (tons)" to be included	1.70

If you have any questions concerning this report, please contact Hannah Placzek (Hannah.placzek@bp.com).

Based on information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

Sincerely,

DocuSigned by:

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Des Gillen
 President - BP-Husky Refining LLC

Attachment A – CMS Summary Report
 Attachment B – Data Assessment Report

Attachment A – CMS Summary Report

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Crude 1 Furnace (0448020007B015)

Total Source Operating Time in Reporting Period²: 2,159 hr

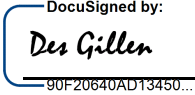
Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Coker 2 Furnace (0448020007B017)

Total Source Operating Time in Reporting Period²: 2,123 hr

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: *Des Gillen*

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

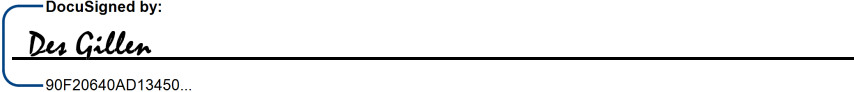
Pollutant: H₂S

Reporting Period Dates: From: January 1, 2022 To: April 1, 2022
Company: BP-Husky Refining LLC
Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average
Address: 4001 Cedar Point Road, Oregon, Ohio 43616
Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300
Date of Latest CMS Certification or Audit: 1/31/2022
Process Unit(s) Description: Crude Vac 2 Furnace (0448020007B019)
Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.
Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: 
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022)

Total Source Operating Time in Reporting Period²: 2,159 hr

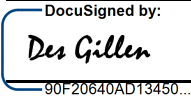
Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
<small>2 Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: DHT A-Train Furnace (0448020007B029)

Total Source Operating Time in Reporting Period²: 2,159 hr (TIU fuel gas was combusted for 2,159 hours and natural gas was combusted for 0 hours for a total of 2,159 hours this quarter)

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:

DocuSigned by:

Des Gillen

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Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: BGOT Furnace (0448020007B030)

Total Source Operating Time in Reporting Period²: 2,159 hr (TIU fuel gas was combusted for 2,159 hours and natural gas was combusted for 0 hours for a total of 2,159 hours this quarter)

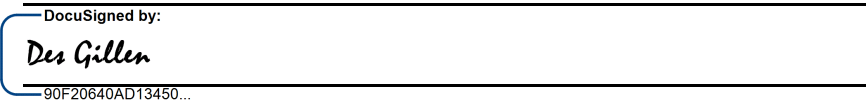
Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: From: January 1, 2022 To: April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Vac 1 Furnace (0448020007B031)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
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Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:

DocuSigned by:

Des Gillen

90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Coker 3 Furnace (0448020007B032)

Total Source Operating Time in Reporting Period²: 2,159 hr


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** March 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: East BGOT Furnace (0448020007B033)

Total Source Operating Time in Reporting Period²: 2,159 hr

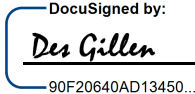
Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: East Alstom Boiler (0448020007B034)

Source Operating Time in Reporting Period²: 2,159 hr (TIU fuel gas was combusted for 21 hours and natural gas was combusted for 2,138 hours for a total of 2,159 hours this quarter)


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The West Alstom Boiler combusted a combination of natural gas and TIU Mix Drum fuel gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant:

H₂S

Reporting Period Dates:

From: January 1, 2022

To: April 1, 2022

Company:

BP-Husky Refining LLC

Emission Limitation:

0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit:

1/31/2022

Process Unit(s) Description:

West Alstom Boiler (0448020007B035)

Total Source Operating Time in Reporting Period²:

2,159 hr

(TIU fuel gas was combusted for 2,159 hours and natural gas was combusted for 0 hours for a total of 2,159 hours this quarter)

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The West Alstom Boiler combusted a combination of natural gas and TIU Mix Drum fuel gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

Signature:

DocuSigned by:

Des Gillen

90F20640AD13450...

Title:

President - BP-Husky Refining LLC

Date:

4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: FCC/CO Boiler (0448020007P007)

Total Source Operating Time in Reporting Period²: 2,159 hr


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	6	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	6	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.3	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
<small>2 Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - TIU MIX DRUM H2S CMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034 - East Alstom Boiler; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	1/20/2022 at 15:00 hours	1/20/2022 at 18:00 hours	CEMS excess emissions for 3 hours	Fuel gas loading was shifted between amine contactors. Amine temperature and loading was not adequate to treat the fuel gas to the required limit.	Amine circulation and steam stripping were increased to improve treating capability.	No	1/20/2022 16:50	1/21/2022 17:08
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034 - East Alstom Boiler; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	1/28/2022 at 04:00 hours	1/28/2022 at 07:00 hours	CEMS excess emissions for 3 hours	An amine exchanger leak resulted in a loss of treating capacity for refinery fuel gas.	The leaking exchanger was isolated, process rates were reduced, and additional amine was brought to the refinery to improve amine treating.	No	1/28/2022 8:26	1/28/2022 17:24
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034 - East Alstom Boiler; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	3/24/2022 at 08:00 hours	3/24/2022 at 13:00 hours	CEMS downtime for 5 hours	Changed Carrier Gas	Due to the national shortage of Helium, the analyzer carrier gas was switched from Helium to Hydrogen. The analyzer was recalibrated and returned to service following the change			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 34.53 tons SO₂ per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Crude 1 Furnace (0448020007B015)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
<small>2 Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:

Signature: *Des Gillen*
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 21.02 tons SO₂ per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Crude Vac 2 Furnace (0448020007B019)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 6.45 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates:

From: January 1, 2022

To: April 1, 2022

Company:

BP-Husky Refining LLC

Emission Limitation:

2.32 tons SO₂ per rolling 12-month period

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit:

1/31/2022

Process Unit(s) Description:

DHT A-Train Furnace (0448020007B029)

Total Source Operating Time in Reporting Period²:

2,159 hr

(TIU fuel gas was combusted for 2,159 hours and natural gas was combusted for 0 hours for a total of 2,159 hours this quarter)

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:

Signature: *Des Gillen*
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 3.86 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: BGOT Furnace (0448020007B030)

Total Source Operating Time in Reporting Period²: 2,159 hr (TIU fuel gas was combusted for 2,159 hours and natural gas was combusted for 0 hours for a total of 2,159 hours this quarter)

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
² Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:

Signature: Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC
4/26/2022

Date: _____

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 11.62 tons SO₂ per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Vac 1 Furnace (0448020007B031)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 20.46 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: Coker 3 Furnace (0448020007B032)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 3.86 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: East BGOT Furnace (0448020007B033)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.2
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates:

From: January 1, 2022

To: April 1, 2022

Company:

BP-Husky Refining LLC

Emission Limitation:

3.86 tons SO₂ per rolling 12-month period

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit:

1/31/2022

Process Unit(s) Description:

East Alstom Boiler (0448020007B034) and West Alstom Boiler (0448020007B035)

Source Operating Time in Reporting Period²:

2,209 hr

(TIU fuel gas was combusted for 2,209 hours in at least one of the Alstom Boilers for the quarter. Natural gas was combusted for 0 hours in both Alstom Boilers for the quarter.)

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	17
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.1
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The East Alstom Boiler combusted only natural gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: *Des Gillen*

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - TIU MIX DRUM TS CMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034/B035 - East and West Alstom Boilers; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	1/11/2022 at 08:00 hours	1/11/2022 at 09:00 hours	CEMS downtime for 1 hours	Recalibrate for Drift	Recalibrated and Returned Analyzer to service.			
B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034/B035 - East and West Alstom Boilers; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	1/30/2022 at 03:00 hours	1/30/2022 at 10:00 hours	CEMS downtime for 7 hours	Analyzer Failed Daily Validation	Analyzer chamber pressure fell and went into standby. Restarted analyzer, recalibrated, and returned to service.			
B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B034/B035 - East and West Alstom Boilers; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	3/3/2022 at 16:00 hours	3/4/2022 at 09:00 hours	CEMS downtime for 17 hours	CEMS Datalogger locked up resulting in irretrievable data.	CEMS Datalogger froze and did not collect data			

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: From: January 1, 2022 To: April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020

Date of Latest CMS Certification or Audit: 1/24/2022

Process Unit(s) Description: Iso 2 Feed Heater (0448020007B008)

Total Source Operating Time in Reporting Period²: 2,159 hr

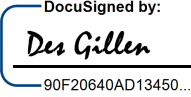
Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S


Reporting Period Dates: From: January 1, 2022 To: April 1, 2022
Company: BP-Husky Refining LLC
Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average
Address: 4001 Cedar Point Road, Oregon, Ohio 43616
Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020
Date of Latest CMS Certification or Audit: 1/24/2022
Process Unit(s) Description: Iso 2 Stabilizer Reboiler (0448020007B009)
Total Source Operating Time in Reporting Period²: 2,105 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: 
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹


Pollutant: H₂S

Reporting Period Dates: From: January 1, 2022 To: April 1, 2022
Company: BP-Husky Refining LLC
Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average
Address: 4001 Cedar Point Road, Oregon, Ohio 43616
Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020
Date of Latest CMS Certification or Audit: 1/24/2022
Process Unit(s) Description: Iso 2 Splitter Reboiler (0448020007B010)
Total Source Operating Time in Reporting Period²: 2,015 hr

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.
Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: 
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST SIDE MIX DRUM H2S CMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi-Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B008 - Iso 2 Feed Heater B009 - Iso 2 Stabilizer Reboiler B010 - Iso 2 Splitter Reboiler	Yes	No	Continuous Monitoring System	3/14/2022 at 11:00 hours	3/14/2022 at 16:00 hours	CEMS downtime for 5 hours	Changed Carrier Gas	Due to the national shortage of Helium, the analyzer carrier gas was switched from Helium to Hydrogen. The analyzer was recalibrated and returned to service following the change			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30029994471080

Date of Latest CMS Certification or Audit: 1/25/2022

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)


Total Source Operating Time in Reporting Period²: 2,159 hr (Reformer 3 fuel gas was combusted for 2,159 hours and natural gas was combusted for 0 hours for a total of 2,159 hours this quarter)

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	12
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	12
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.6
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The Reformer 3 Furnace combusted a combination of Reformer 3 fuel gas and natural gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: 
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 60 ppmv H₂S in fuel gas on a 365-day rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30029994471080

Date of Latest CMS Certification or Audit: 1/25/2022

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	12
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	12
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.6
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The Reformer 3 Furnace combusted a combination of Reformer 3 fuel gas and natural gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: Des Gillen
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - REFORMER 3 FURNACE H2S CMS REPORT FOR 1ST

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B036 - Reformer 3 Furnace	Yes	No	Continuous Monitoring System	3/14/2022 at 10:00 hours	3/14/2022 at 22:00 hours	CEMS downtime for 12 hours	Changed Carrier Gas	Due to the national shortage of Helium, the analyzer carrier gas was switched from Helium to Hydrogen. The analyzer was recalibrated and returned to service following the change			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30050531960100

Date of Latest CMS Certification or Audit: 1/26/2022

Process Unit(s) Description: East Flare (0448020007P003)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	32
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	18	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	2
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	18	2. Total CMS Downtime	34
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.8	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.6
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: DocuSigned by: Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST FLARE H2S CMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P003 - East Flare	Yes	No	Continuous Monitoring System	3/15/2022 at 09:00 hours	3/15/2022 at 11:00 hours	CEMS downtime for 2 hours	Changed Carrier Gas	Due to the national shortage of Helium, the analyzer carrier gas was switched from Helium to Hydrogen. The analyzer was recalibrated and returned to service following the change			
P003 - East Flare	Yes	No	Continuous Monitoring System	3/25/2022 at 07:00 hours	3/26/2022 at 15:00 hours	CEMS out-of-control time for 32 hours	Sample Return Line Maintainence	Sample exhaust tubing was plugged. Tubing was replaced and analyzer was calibrated and returned to service.			
P003 - East Flare	Yes	No	Continuous Monitoring System	3/25/2022 at 23:00 hours	3/26/2022 at 09:00 hours	CEMS excess emissions for 10 hours	The FCC was shutdown due to the inadvertant activation of the E- stop. Flaring associated with the shut down resulted in increased H2S emissions at the flare.	The FCC was put into hot-standby and procedures were utilized to minimize flaring.	No	3/25/2022	3/28/2022
P003 - East Flare	Yes	No	Continuous Monitoring System	3/27/2022 at 17:00 hours	3/27/2022 at 22:00 hours	CEMS excess emissions for 5 hours	The FCC and Alky units were in the process of restarting as a part of the trip on 3/25/2022. Flare baseload was increased as a part of the start up activities and resulted in increased H2S emissions at the flare	Start up procedures were used and to minimize flaring.	No	3/25/2022	3/28/2022
P003 - East Flare	Yes	No	Continuous Monitoring System	3/28/2022 at 00:00 hours	3/28/2022 at 03:00 hours	CEMS excess emissions for 3 hours	The FCC and Alky units were in the process of restarting as a part of the trip on 3/25/2022. Flare baseload was increased as a part of the start up activities and resulted in increased H2S emissions at the flare	Start up procedures were used and to minimize flaring.	No	3/25/2022	3/28/2022

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO₂ emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-10430115

Date of Latest CMS Certification or Audit: TS Low: 1/19/2022; TS High: 1/19/2022

Process Unit(s) Description: East Flare (0448020007P003)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	26
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	0
d. Other known causes	NA	d. Other known causes	26
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	52
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	2.4
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST FLARE TS CMS REPORT FOR 1ST QUARTER 2022											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P003 - East Flare	Yes	No	Continuous Monitoring System	1/11/2022 at 9:00:00 hours	1/11/2022 at 10:00:00 hours	CEMS downtime for 1 hours	Recalibrate for Drift	Recalibrated and Returned Analyzer to service.			
P003 - East Flare	Yes	No	Continuous Monitoring System	1/28/2022 at 10:00 hours	1/29/2022 at 10:00 hours	CEMS out-of-control time for 24 hours	Analyzer Failed Daily Validation	Power switch at the analyzer building was shutoff. Power was returned to the analyzer and a calibration was completed.			
P003 - East Flare	Yes	No	Continuous Monitoring System	1/31/2022 at 08:00 hours	2/1/2022 at 10:00 hours	CEMS out-of-control time for 26 hours	Analyzer Failed Daily Validation	Analyzer sample heater cell failed. Replaced the sample heater, recalibrated, and returned to service.			
P003 - East Flare	Yes	No	Continuous Monitoring System	3/25/2022 at 12:00 hours	3/25/2022 at 13:00 hours	CEMS downtime for 1 hours	Recalibrate for Drift	Recalibrated and Returned Analyzer to service.			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30050531960400

Date of Latest CMS Certification or Audit: 1/27/2022

Process Unit(s) Description: West Flare Vent Gas (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,159 hr

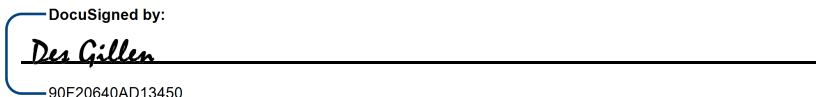
Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	49
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	10	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	5
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	10	2. Total CMS Downtime	54
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.5	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	2.5
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: West Flare C Valve (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,159 hr

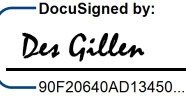
Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	0
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	0
d. Other known causes	NA	d. Other known causes	5
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CMS Downtime	5
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA ⁴	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.2
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			
⁴ Excess emissions are reported in the West Flare Vent Gas section, and are not included in this section to avoid double counting.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE H2S CMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P004 - West Flare	Yes	No	Continuous Monitoring System	1/31/2022 at 10:00 hours	1/31/2022 at 12:00 hours	CEMS downtime for 2 hours	Recalibrate for Drift	Recalibrated and Returned Analyzer to service.			
P004 - West Flare	Yes	No	Continuous Monitoring System	2/1/2022 at 09:00 hours	2/1/2022 at 10:00 hours	CEMS downtime for 1 hour	Recalibrate for Drift	Recalibrated and Returned Analyzer to service.			
P004 - West Flare	Yes	No	Continuous Monitoring System	2/20/2022 at 08:00 hours	2/22/2022 at 09:00 hours	CEMS downtime for 49 hours	Software communication failure	CEMS Software did not flag the passing morning validation. Analyzer technicians checked analyzer and recalibrated.			
P004 - West Flare	Yes	No	Continuous Monitoring System	3/22/2022 at 09:00 hours	3/22/2022 at 11:00 hours	CEMS downtime for 2 hours	Changed Carrier Gas	Due to the national shortage of Helium, the analyzer carrier gas was switched from Helium to Hydrogen. The analyzer was recalibrated and returned to service following the change			
P004 - West Flare	Yes	No	Continuous Monitoring System	3/25/2022 at 23:00 hours	3/26/2022 at 06:00 hours	CEMS excess emissions for 7 hours	The FCC was shutdown due to the inadvertant activation of the E- stop. Flaring associated with the shut down resulted in increased H2S emissions at the flare.	The FCC was put into hot-standby and procedures were utilized to minimize flaring.	No	3/25/2022	3/28/2022
P004 - West Flare	Yes	No	Continuous Monitoring System	3/27/2022 at 18:00 hours	3/27/2022 at 21:00 hours	CEMS excess emissions for 3 hours	The FCC and Alky units were in the process of restarting as a part of the trip on 3/25/2022. Flare baseload was increased as a part of the start up activities and resulted in increased H2S emissions at the flare	Start up procedures were used and to minimize flaring.	No	3/25/2022	3/28/2022

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO2 emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-10440115

Date of Latest CMS Certification or Audit: TS Low: 1/21/2022; TS High: 1/21/2022

Process Unit(s) Description: West Flare Vent Gas (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,159 hr


Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	32
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	0
d. Other known causes	NA	d. Other known causes	0
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	32
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	1.5
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO2 emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 1/31/2022

Process Unit(s) Description: West Flare C Valve (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,159 hr


Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	8
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	17
c. Process Problems	NA	c. Quality assurance calibration	0
d. Other known causes	NA	d. Other known causes	0
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	25
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	1.2
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE TS CMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P004 - West Flare	Yes	No	Continuous Monitoring System	3/25/2022 at 07:00 hours	3/26/2022 at 15:00 hours	CEMS out-of-control time for 32 hours	Analyzer Failed Daily Validation	Sample line had liquid carryover. Sample line was cleared and dried before the analyzer was recalibrated and returned to service.			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 40 ppm_{v,d} (30-day rolling average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2

Date of Latest CEMS Certification or Audit: 2/1/2022

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.0
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CEMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - REFORMER 3 FURNACE H2S CMS REPORT FOR 1ST

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B036 - Reformer 3 Furnace	Yes	No	Continuous Monitoring System	3/14/2022 at 10:00 hours	3/14/2022 at 22:00 hours	CEMS downtime for 12 hours	Changed Carrier Gas	Due to the national shortage of Helium, the analyzer carrier gas was switched from Helium to Hydrogen. The analyzer was recalibrated and returned to service following the change			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: CO

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 500 ppmv CO, db, 1-hr average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB URAS 14, SN: 3.240684.3

Date of Latest CEMS Certification or Audit: 2/3/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 64 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	15	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	15	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	23%	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

Excess Emission and Monitoring System Performance Report FCC Exhaust Bypass Unit CEMS Report (Source # P007) 1Q2022

In accordance with the Title V Permit, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

The FCC Bypass operated for a total of 64 hours in 1Q. There were five periods of excess emissions for this CEMS. Total excess emissions from these periods exceeded 500 ppm CO on an hourly average.

- Start time: 3/26/2022 at 00:00
End time: 3/26/2022 02:00
Duration: 2 hours
- Start time: 3/26/2022 at 03:00
End time: 3/26/2022 07:00
Duration: 4 hours
- Start time: 3/27/2022 at 04:00
End time: 3/27/2022 05:00
Duration: 1 hour
- Start time: 3/27/2022 at 07:00
End time: 3/27/2022 10:00
Duration: 3 hours
- Start time: 3/27/2022 at 11:00
End time: 3/27/2022 16:00
Duration: 5 hours

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

These periods of excess emissions were due to an FCC shutdown caused by the inadvertent activation of the E-stop. The unit was placed in hot standby with the flue gas directed through the FCC bypass stack which resulted in excess CO emissions. As a corrective action, torch oil was introduced to maintain temperatures in the regenerator and minimize CO emissions while the unit was in hot standby.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There were no periods of downtime while the FCC Exhaust Bypass was in operation.

BP-HUSKY REFINING LLC - FCC REGEN VENT CO CEMS REPORT 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	3/26/2022 at 00:00 hours	3/26/2022 at 02:00 hours	CEMS excess emissions for 2 hours	The FCC was shutdown due to the inadvertant activation of the E-stop. While the FCC was in hot standby, the flue gas was directed through the FCC Bypass stack which resulted in elevated CO emissions.	Torch oil was introduced in order to maintain temperatures in the regenerator while the FCC was placed in hot standby to minimize CO emissions.	No	No	No
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	3/26/2022 at 03:00 hours	3/26/2022 at 07:00 hours	CEMS excess emissions for 4 hours	The FCC was shutdown due to the inadvertant activation of the E-stop. While the FCC was in hot standby, the flue gas was directed through the FCC Bypass stack which resulted in elevated CO emissions.	Torch oil was introduced in order to maintain temperatures in the regenerator while the FCC was placed in hot standby to minimize CO emissions.	No	No	No
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	3/27/2022 at 04:00 hours	3/27/2022 at 05:00 hours	CEMS excess emissions for 1 hour	The FCC was shutdown due to the inadvertant activation of the E-stop. While the FCC was in hot standby, the flue gas was directed through the FCC Bypass stack which resulted in elevated CO emissions.	Torch oil was introduced in order to maintain temperatures in the regenerator while the FCC was placed in hot standby to minimize CO emissions.	No	No	No
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	3/27/2022 at 07:00 hours	3/27/2022 at 10:00 hours	CEMS excess emissions for 3 hours	The FCC was shutdown due to the inadvertant activation of the E-stop. While the FCC was in hot standby, the flue gas was directed through the FCC Bypass stack which resulted in elevated CO emissions.	Torch oil was introduced in order to maintain temperatures in the regenerator while the FCC was placed in hot standby to minimize CO emissions.	No	No	No
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	3/27/2022 at 11:00 hours	3/27/2022 at 16:00 hours	CEMS excess emissions for 5 hours	The FCC was shutdown due to the inadvertant activation of the E-stop. While the FCC was in hot standby, the flue gas was directed through the FCC Bypass stack which resulted in elevated CO emissions.	Torch oil was introduced in order to maintain temperatures in the regenerator while the FCC was placed in hot standby to minimize CO emissions.	No	No	No

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 58.1 ppmv NO_x db @ 0% O₂ (365-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240682.3

Date of Latest CEMS Certification or Audit: 2/3/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 64 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NOx

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240682.3

Date of Latest CEMS Certification or Audit: 2/3/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 64 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

DocuSigned by:
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC REGEN VENT NOx CEMS REPORT 1ST QUARTER 2022											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	No downtime or excess emissions during this reporting quarter.							

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 260 ppmvd SO₂ at 0% excess O₂ as a rolling 7-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 2/3/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 64 hr

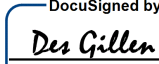
Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 160 ppmvd SO₂ at 0% excess O₂ as a rolling 365-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 2/3/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 64 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 1,020 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 2/3/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 64 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>² Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

DocuSigned by:

Signature: *Des Gillen*

90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.92 lb SO₂ per 1000 lb of fresh feed

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 2/3/2022

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 64 hr


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC REGEN VENT SO2 CEMS REPORT 1ST QUARTER 2022											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	No downtime or excess emissions during this reporting quarter.							

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: CO

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 500 ppmv CO, db, 1-hr average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB URAS 26, SN: 3.347698.3

Date of Latest CEMS Certification or Audit: 1/26/2022

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	2
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	10
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.5
<small>2 Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:

Signature: Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC/CO BOILER CO CEMS REPORT 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	1/5/2022 at 09:00 hours	1/5/2022 at 11:00 hours	CEMS out-of-control time for 2 hours	Analyzer Failed Daily Validation	Cylinder gas was not available for calibration. A two hour grace period is considered for the daily validation issue on the basis that the validation was missed due to an issue with the calibration gas. Time outside of the grace period is considered OOC. Corrected calibration gas issue, recalibrated, and returned to service.			
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	1/12/2022 at 09:00 hours	1/12/2022 at 17:00 hours	CEMS downtime for 8 hours	Sample Pump Failure	Sample pump was replaced and analyzer was recalibrated and returned to service.			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NOx

Reporting Period Dates: From: January 1, 2022 To: April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 1/26/2022

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	2
c. Process Problems	85	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	85	2. Total CEMS Downtime	10
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	3.9	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.5
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NOx

Reporting Period Dates: From: January 1, 2022 To: April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 58.1 ppmv NOx db @ 0% O2 (365-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 1/26/2022

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	2
c. Process Problems	85	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	85	2. Total CEMS Downtime	10
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	3.9	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.5
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: Des Gillen
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

Excess Emission and Monitoring System Performance Report
CO Boiler Unit CEMS Report (Source # P007)
1Q2022

In accordance with the Title V Permit, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

The CO Boiler operated for a total of 2,159 hours in 1Q. There were two periods of excess emissions for this CEMS. Total excess emissions from these periods exceeded 93.4 ppm NOX on a rolling 7-day basis.

- Start time: 3/28/2022 at 12:00
End time: 3/29/2022 11:00
Duration: 23 hours
- Start time: 3/30/2022 at 16:00
End time: 4/2/2022 06:00
Duration: 62 hours

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

These periods of excess emissions were due to an FCC shutdown caused by the inadvertent activation of the E-stop. The unit was placed in hot standby with the flue gas directed through the FCC bypass stack. During this time, the CO Boiler increased firing to generate steam which resulted in excess NOX emissions. As a corrective action, the steam load was shifted to other steam generating sources to minimize impact.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There were two period of CEMS downtime for the quarter while the source was in operation and are as listed below:

- Start time: 1/5/2022 09:00
End time: 1/5/2022 11:00
Duration: 2 hours

This out-of-control period was due to the cylinder gas availability. The calibration gas was corrected, the analyzer was recalibrated and returned to service.

Excess Emission and Monitoring System Performance Report
CO Boiler Unit CEMS Report (Source # P007)
1Q2022

- Start time: 1/12/2022 09:00
End time: 1/12/2022 17:00
Duration: 8 hours

This period of downtime was due a sample pump failure. The sample pump was replaced and the analyzer was recalibrated and returned to service.

BP-HUSKY REFINING LLC - FCC/CO BOILER NOx CEMS REPORT 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	1/5/2022 at 09:00 hours	1/5/2022 at 11:00 hours	CEMS out-of-control time for 2 hours	Analyzer Failed Daily Validation	Cylinder gas was not available for calibration. A two hour grace period is considered for the daily validation issue on the basis that the validation was missed due to an issue with the calibration gas. Time outside of the grace period is considered OOC. Corrected calibration gas issue, recalibrated, and returned to service.			
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	1/12/2022 at 09:00 hours	1/12/2022 at 17:00 hours	CEMS downtime for 8 hours	Sample Pump Failure	Sample pump was replaced and analyzer was recalibrated and returned to service.			
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	3/28/2022 at 12:00 hours	3/29/2022 at 11:00 hours	CEMS excess emissions for 23 hours	The FCC was shutdown due to the inadvertant activation of the E-stop. While the FCC was in hot standby with the flue gas directed through the FCC Bypass Stack, the CO Boiler increased firing to generate steam. Increased COB firing increased NOx emissions from the CO boiler burners.	Steam load was shifted to other steam generating sources in the refinery to relieve the firing on the CO Boiler and to minimize impact.	No	No	No
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	3/30/2022 at 16:00 hours	4/2/2022 at 06:00 hours	CEMS excess emissions for 62 hours	The FCC was shutdown due to the inadvertant activation of the E-stop. While the FCC was in hot standby with the flue gas directed through the FCC Bypass Stack, the CO Boiler increased firing to generate steam. Increased COB firing increased NOx emissions from the CO boiler burners.	Steam load was shifted to other steam generating sources in the refinery to relieve the firing on the CO Boiler and to minimize impact.	No	No	No

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 260 ppmvd SO2 at 0% excess O2 as a rolling 7-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 1/26/2022

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,159 hr


Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	2
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	10
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.5
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 160 ppmvd SO2 at 0% excess O2 as a rolling 365-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 1/26/2022

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,159 hr


Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	2
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	10
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.5
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 1,020 tons SO₂ per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 1/26/2022

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,159 hr

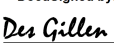
Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	2
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	10
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.5
² Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.92 lb SO₂ per 1000 lb of fresh feed

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 1/26/2022

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,159 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	8
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	2
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	10
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.5
² Record all times in hours. ³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC/CO BOILER SO2 CEMS REPORT 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	1/5/2022 at 09:00 hours	1/5/2022 at 11:00 hours	CEMS out-of-control time for 2 hours	Analyzer Failed Daily Validation	Cylinder gas was not available for calibration. A two hour grace period is considered for the daily validation issue on the basis that the validation was missed due to an issue with the calibration gas. Time outside of the grace period is considered OOC. Corrected calibration gas issue, recalibrated, and returned to service.			
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	1/12/2022 at 09:00 hours	1/12/2022 at 17:00 hours	CEMS downtime for 8 hours	Sample Pump Failure	Sample pump was replaced and analyzer was recalibrated and returned to service.			

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 250 ppm SO₂ dry, 0% excess O₂ (12-hour average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Ametek Model 919, SN: ZB-919SP-10541-1

Date of Latest CEMS Certification or Audit: 1/25/2022

Process Unit(s) Description: #1 Claus Sulfur Recovery Unit with SCOT Unit (0448020007P009)

Total Source Operating Time in Reporting Period²: 2,146 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown ⁴ :	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.0
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 250 ppm SO₂ dry, 0% excess O₂ (12-hour average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Ametek Model 919 and WDG-V, SN: ZX-919-10814-1

Date of Latest CEMS Certification or Audit: 1/25/2022

Process Unit(s) Description: Sulfur Recovery Units # 2 & #3 with TGT #2 (0448020007P037)

Total Source Operating Time in Reporting Period²: 2,159 hr


Emission Data Summary		CEMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	59
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	51	c. Quality assurance calibration	1
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	51	2. Total CEMS Downtime	60
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	2.4	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	2.8
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 1Q2022

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

#2 and 3 Sulfur Recovery Units operated for a total of 2159 hours in 1Q. There was one period of excess emissions for this CEMS. Total excess emissions from these periods exceeded 250 ppm SO₂ on a rolling 12 hour basis.

- Start time: 1/28/2022 08:00
End time: 1/30/2022 11:00
Duration: 51 hours

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

This period of excess emissions was due to a leaking amine exchanger which resulted in a loss of stripping capacity for the TRP unit. The exchanger was isolated, process rates were reduced, and additional amine was brought to the refinery to improve amine treating.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There were four periods of CEMS downtime for the quarter while the source was in operation and it is listed below:

- Start time: 1/25/2022 13:00
End time: 1/25/2022 14:00
Duration: 1 hour

This period of downtime was due to the cylinder gas audit completion. The analyzer was recalibrated and returned to service.

- Start time: 1/28/2022 07:00
End time: 1/29/2022 17:00
Duration: 34 hours

This out-of-control period was caused by a failed daily calibration. The analyzer was recalibrated and returned to service.

**Excess Emission and Monitoring System Performance Report
#2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037)
1Q2022**

- Start time: 1/30/2022 10:00
End time: 1/31/2022 09:00
Duration: 23 hours

This out-of-control period was caused by a failed daily calibration. The analyzer was recalibrated and returned to service.

- Start time: 2/3/2022 11:00
End time: 2/3/2022 13:00
Duration: 2 hours

This period of downtime was due maintenance on the sample line. Fittings were replaced and the analyzer was recalibrated and returned to service.

BP-HUSKY REFINING LLC SRU #2 & SRU #3 SO2 CEMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID / Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	1/25/2022 at 13:00 hours	1/25/2022 at 14:00 hours	CEMS downtime for 1 hours	CGA Test Completed	Recalibrated and Returned Analyzer to service.			
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	1/28/2022 at 07:00 hours	1/29/2022 at 17:00 hours	CEMS out-of-control time for 34 hours	Analyzer Failed Daily Validation	Recalibrated and Returned Analyzer to service.			
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	1/30/2022 at 10:00 hours	1/31/2022 at 09:00 hours	CEMS out-of-control time for 23 hours	Analyzer Failed Daily Validation	Recalibrated and Returned Analyzer to service.			
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	2/3/2022 at 11:00 hours	2/3/2022 at 13:00 hours	CEMS downtime for 2 hours	Sample Line Maintenance	Fittings on sample line were replaced. Recalibrated and returned to service.			
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	1/28/2022 at 08:00 hours	1/30/2022 at 11:00 hours	CEMS excess emissions for 51 hours	An amine exchanger leak resulted in a loss of stripping capacity for the TRP.	The leaking exchanger was isolated, process rates were reduced, and additional amine was brought to the refinery to improve amine treating.	No	1/28/2022	1/28/2022

Additional Information Required under PTI # 04-1046

- 1. Total SO₂ emissions during calendar quarter (in tons), including any excess emissions attributed to the malfunction, startup, or shutdown of emissions unit P037. (ST&C III.A.iii)**

Total SO₂ emissions from the TRP SRUs during the period January 1, 2022 through March 31, 2022 were calculated at 10.6 tons.

- 2. Total operating time of the CEMS while either SRU was online. (ST&C III.A.iii)**

During the quarter, the total source operating time while either or both SRUs were in service was 2,159 hours. The CEMS was online and monitoring for 2,099 hours while either SRU was in service.

During the quarter, there were four periods of CEMS out-of-control time and two periods of CEMS downtime for a total duration of 60 hours. Details of this event are summarized in the table attached.

- 3. Quantification of emissions routed from the SRU to the flare beginning with activation of the relief valve until the release is over. (ST&C VII.A)**

There were no periods during the 1st quarter when acid gas was sent to the TRP Acid Gas flare.

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2

Monitor Location: Sample port on East Alstom Boiler Stack; monitor housed at ground level in an analyzer building adjacent the boiler.

Date of Latest CMS Cert or Audit: 3/17/2022

Process Unit(s) Description: East Alstom Boiler (0448020007B034)

Total Source Operating Time in Reporting Period: 2,159 hr (TIU fuel gas was combusted for 21 hours and natural gas was combusted for 2,138 hours for a total of 2,159 hours this quarter)

CMS operating time while emission unit was in operation: 2,159 hr


Emission Limitation: 12.71 lb/hr of NO_x emissions;
38.5 tons/rolling 12-month period of NO_x emissions (combined B034 & B035);
0.10 lb NO_x (as NO₂) per mmBtu heat input 30-day rolling average

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - No changes since last quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: 
80F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B034 - Eest Alstom Boiler	Yes	No	Continuous Monitoring System	No downtime or excess emissions during this reporting quarter.							

East Alstom Boiler - 1st Quarter 2022 Db Data**NSPS Db: Supplemental Reporting for NO_x CEM Records as required by 40 CFR 49b(i)**

This table contains the information required by 60.49(g)(1-8).

Records for (g)(9-10) are provided in the NSPS Quarterly CEMS Report.

East Alstom Boiler (B034): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/MMBtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/MMBtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO_x/MMBtu

Date	Hourly daily average NO _x (lb/MMBtu)	30-day rolling average NO _x (lb/MMBtu)	Excess Emissions (yes/no)	NO _x Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
1/1/2022	0.021	0.024	No	No	
1/2/2022	0.023	0.024	No	No	
1/3/2022	0.021	0.024	No	No	
1/4/2022	0.022	0.024	No	No	
1/5/2022	0.027	0.024	No	No	
1/6/2022	0.026	0.024	No	No	
1/7/2022	0.025	0.024	No	No	
1/8/2022	0.027	0.024	No	No	
1/9/2022	0.027	0.024	No	No	
1/10/2022	0.032	0.024	No	No	
1/11/2022	0.031	0.024	No	No	
1/12/2022	0.025	0.024	No	No	
1/13/2022	0.022	0.024	No	No	
1/14/2022	0.021	0.024	No	No	
1/15/2022	0.019	0.024	No	No	
1/16/2022	0.019	0.024	No	No	
1/17/2022	0.019	0.024	No	No	
1/18/2022	0.021	0.023	No	No	
1/19/2022	0.025	0.024	No	No	
1/20/2022	0.023	0.023	No	No	
1/21/2022	0.022	0.023	No	No	
1/22/2022	0.023	0.023	No	No	
1/23/2022	0.021	0.023	No	No	
1/24/2022	0.021	0.023	No	No	
1/25/2022	0.022	0.023	No	No	
1/26/2022	0.024	0.023	No	No	
1/27/2022	0.025	0.023	No	No	
1/28/2022	0.019	0.023	No	No	
1/29/2022	0.020	0.023	No	No	
1/30/2022	0.021	0.023	No	No	
1/31/2022	0.022	0.023	No	No	
2/1/2022	0.022	0.023	No	No	
2/2/2022	0.020	0.023	No	No	
2/3/2022	0.018	0.023	No	No	
2/4/2022	0.019	0.023	No	No	
2/5/2022	0.021	0.023	No	No	
2/6/2022	0.021	0.022	No	No	
2/7/2022	0.021	0.022	No	No	
2/8/2022	0.022	0.022	No	No	
2/9/2022	0.020	0.022	No	No	
2/10/2022	0.022	0.022	No	No	
2/11/2022	0.021	0.021	No	No	
2/12/2022	0.023	0.021	No	No	
2/13/2022	0.023	0.021	No	No	
2/14/2022	0.021	0.021	No	No	
2/15/2022	0.022	0.021	No	No	
2/16/2022	0.023	0.022	No	No	
2/17/2022	0.023	0.022	No	No	
2/18/2022	0.021	0.022	No	No	
2/19/2022	0.022	0.022	No	No	
2/20/2022	0.020	0.021	No	No	
2/21/2022	0.020	0.021	No	No	
2/22/2022	0.020	0.021	No	No	
2/23/2022	0.026	0.021	No	No	
2/24/2022	0.022	0.022	No	No	
2/25/2022	0.019	0.021	No	No	

Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
2/26/2022	0.022	0.021	No	No	
2/27/2022	0.023	0.021	No	No	
2/28/2022	0.020	0.021	No	No	
3/1/2022	0.021	0.021	No	No	
3/2/2022	0.020	0.021	No	No	
3/3/2022	0.021	0.021	No	No	
3/4/2022	0.022	0.021	No	No	
3/5/2022	0.022	0.021	No	No	
3/6/2022	0.021	0.022	No	No	
3/7/2022	0.021	0.022	No	No	
3/8/2022	0.021	0.022	No	No	
3/9/2022	0.023	0.022	No	No	
3/10/2022	0.022	0.022	No	No	
3/11/2022	0.023	0.022	No	No	
3/12/2022	0.022	0.022	No	No	
3/13/2022	0.023	0.022	No	No	
3/14/2022	0.023	0.022	No	No	
3/15/2022	0.021	0.022	No	No	
3/16/2022	0.024	0.022	No	No	
3/17/2022	0.024	0.022	No	No	
3/18/2022	0.019	0.022	No	No	
3/19/2022	0.020	0.022	No	No	
3/20/2022	0.019	0.022	No	No	
3/21/2022	0.018	0.021	No	No	
3/22/2022	0.021	0.021	No	No	
3/23/2022	0.020	0.021	No	No	
3/24/2022	0.018	0.021	No	No	
3/25/2022	0.019	0.021	No	No	
3/26/2022	0.022	0.021	No	No	
3/27/2022	0.021	0.021	No	No	
3/28/2022	0.021	0.021	No	No	
3/29/2022	0.023	0.021	No	No	
3/30/2022	0.023	0.021	No	No	
3/31/2022	0.023	0.021	No	No	

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** January 1, 2022 **To:** April 1, 2022

Company: BP-Husky Refining LLC

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2

Monitor Location: Sample port on West Alstom Boiler Stack; monitor housed at ground level in an analyzer building adjacent the boiler.

Date of Latest CMS Certification or Audit: 3/16/2022

Process Unit(s) Description: West Alstom Boiler (0448020007B035)

Total Source Operating Time in Reporting Period: 2,159 hr (TIU fuel gas was combusted for 2,159 hours and natural gas was combusted for 0 hours for a total of 2,159 hours this quarter)

CMS operating time while emission unit was in operation: 2,084 hr


Emission Limitation: 12.71 lb/hr of NO_x emissions;
38.5 tons/rolling 12-month period of NO_x emissions (combined B034 & B035);
0.10 lb NO_x (as NO₂) per mmBtu heat input 30-day rolling average

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	75
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	75
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.5
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - No changes since last quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: 
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 4/26/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST ALSTOM BOILER NO_x CEMS REPORT FOR 1ST QUARTER 2022

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B035 - West Alstom Boiler	Yes	No	Continuous Monitoring System	2/22/2022 at 13:00 hours	2/25/2022 at 16:00 hours	CEMS out-of-control time for 75 hours	Cylinder Gas Audit Failed	Cylinder gas audit failed. Analyzer was checked and cylinder gas audit was repeated.			

West Alstom Boiler - 1st Quarter 2022 Db Data

NSPS Db: Supplemental Reporting for NO_x CEM Records as required by 40 CFR 49b(i)

This table contains the information required by 60.49(g)(1-8).

Records for (g)(9-10) are provided in the NSPS Quarterly CEMS Report.

West Alstom Boiler (B035): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/MMBtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/MMBtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO_x/MMBtu

Date	Hourly daily average NO _x (lb/MMBtu)	30-day rolling average NO _x (lb/MMBtu)	Excess Emissions (yes/no)	NO _x Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
1/1/2022	0.028	0.025	No	No	
1/2/2022	0.031	0.025	No	No	
1/3/2022	0.031	0.026	No	No	
1/4/2022	0.029	0.026	No	No	
1/5/2022	0.029	0.026	No	No	
1/6/2022	0.026	0.026	No	No	
1/7/2022	0.028	0.026	No	No	
1/8/2022	0.030	0.026	No	No	
1/9/2022	0.030	0.026	No	No	
1/10/2022	0.035	0.026	No	No	
1/11/2022	0.035	0.027	No	No	
1/12/2022	0.029	0.027	No	No	
1/13/2022	0.030	0.027	No	No	
1/14/2022	0.032	0.027	No	No	
1/15/2022	0.032	0.028	No	No	
1/16/2022	0.031	0.028	No	No	
1/17/2022	0.033	0.028	No	No	
1/18/2022	0.029	0.028	No	No	
1/19/2022	0.027	0.028	No	No	
1/20/2022	0.030	0.029	No	No	
1/21/2022	0.029	0.029	No	No	
1/22/2022	0.028	0.029	No	No	
1/23/2022	0.028	0.029	No	No	
1/24/2022	0.028	0.029	No	No	
1/25/2022	0.030	0.029	No	No	
1/26/2022	0.030	0.030	No	No	
1/27/2022	0.029	0.030	No	No	
1/28/2022	0.027	0.030	No	No	
1/29/2022	0.027	0.030	No	No	
1/30/2022	0.028	0.030	No	No	
1/31/2022	0.028	0.030	No	No	
2/1/2022	0.029	0.030	No	No	
2/2/2022	0.029	0.030	No	No	
2/3/2022	0.030	0.030	No	No	
2/4/2022	0.029	0.030	No	No	
2/5/2022	0.029	0.030	No	No	
2/6/2022	0.029	0.030	No	No	
2/7/2022	0.026	0.030	No	No	
2/8/2022	0.026	0.029	No	No	
2/9/2022	0.026	0.029	No	No	
2/10/2022	0.027	0.029	No	No	
2/11/2022	0.028	0.029	No	No	
2/12/2022	0.026	0.029	No	No	
2/13/2022	0.025	0.029	No	No	
2/14/2022	0.026	0.028	No	No	
2/15/2022	0.025	0.028	No	No	
2/16/2022	0.024	0.028	No	No	
2/17/2022	0.025	0.028	No	No	
2/18/2022	0.025	0.028	No	No	
2/19/2022	0.026	0.028	No	No	
2/20/2022	0.027	0.027	No	No	
2/21/2022	0.025	0.027	No	No	
2/22/2022	0.025	0.027	No	No	
2/23/2022	0.032	0.027	No	No	
2/24/2022	0.027	0.027	No	No	
2/25/2022	0.028	0.027	No	No	
2/26/2022	0.023	0.027	No	No	

Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
2/27/2022	0.025	0.027	No	No	
2/28/2022	0.027	0.027	No	No	
3/1/2022	0.029	0.027	No	No	
3/2/2022	0.029	0.027	No	No	
3/3/2022	0.029	0.027	No	No	
3/4/2022	0.027	0.027	No	No	
3/5/2022	0.025	0.027	No	No	
3/6/2022	0.024	0.027	No	No	
3/7/2022	0.024	0.026	No	No	
3/8/2022	0.025	0.026	No	No	
3/9/2022	0.025	0.026	No	No	
3/10/2022	0.026	0.026	No	No	
3/11/2022	0.026	0.026	No	No	
3/12/2022	0.028	0.026	No	No	
3/13/2022	0.026	0.026	No	No	
3/14/2022	0.025	0.026	No	No	
3/15/2022	0.026	0.026	No	No	
3/16/2022	0.026	0.026	No	No	
3/17/2022	0.024	0.026	No	No	
3/18/2022	0.023	0.026	No	No	
3/19/2022	0.023	0.026	No	No	
3/20/2022	0.025	0.026	No	No	
3/21/2022	0.025	0.026	No	No	
3/22/2022	0.029	0.026	No	No	
3/23/2022	0.029	0.026	No	No	
3/24/2022	0.026	0.026	No	No	
3/25/2022	0.025	0.026	No	No	
3/26/2022	0.027	0.026	No	No	
3/27/2022	0.032	0.026	No	No	
3/28/2022	0.032	0.026	No	No	
3/29/2022	0.027	0.026	No	No	
3/30/2022	0.027	0.027	No	No	
3/31/2022	0.024	0.026	No	No	

Attachment B – Data Assessment Report

Data Assessment Report - East Side Fuel Gas Mix Drum H₂S CMS

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B008, B009, B010

<i>CEMS Manufacturer:</i> Siemens	<i>Model #:</i> Maxim II	<i>CEMS Serial #:</i> 30028039490020
<i>CEMS type:</i> Hydrogen Sulfide	<i>CEMS sampling location:</i> East Side Fuel Gas Mix Drum	
<i>CEMS span values as per the applicable regulation:</i>		
	<u>PPM</u>	<u>Percent</u>
SO₂		O₂
H₂S	300	CO₂

- I. **Accuracy assessment results** (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for:

		Vivicom	PI
1.	Date of audit:	1/24/2022	1/24/2022
2.	Reference method (RM) used:	Method 15	Method 15
3.	Average RM value:	8.8	8.8
4.	Average CEMS value:	7.2	6.8
5.	Absolute value of mean difference:	1.7	2.0
6.	Confidence coefficient:	1.260	1.275
7.	Percent relative accuracy: (based on applicable standard)	1.81	2.02

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

B. Cylinder gas audit (CGA) for H₂S (ppm): (Not Applicable this quarter)

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - TIU Fuel Gas Mix Drum H₂S CMS

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B015, B017, B019, B022, B029, B030, B031, B032, B033, B035, P007

<i>CEMS Manufacturer:</i> Siemens	<i>Model #:</i> Maxim II	<i>CEMS Serial #:</i> 30020117999300	
<i>CEMS type:</i> Hydrogen Sulfide	<i>CEMS sampling location:</i> TIU Fuel Gas Mix Drum		
<i>CEMS span values as per the applicable regulation:</i>			
	<u>PPM</u>		<u>Percent</u>
SO ₂		O ₂	
H ₂ S	300	CO ₂	

- I. **Accuracy assessment results** (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for:

		Vivicom	PI
1.	Date of audit:	1/31/2022	1/31/2022
2.	Reference method (RM) used:	Method 15	Method 15
3.	Average RM value:	11.3	11.2
4.	Average CEMS value:	10.2	10.0
5.	Absolute value of mean difference:	1.0	1.10
6.	Confidence coefficient:	0.862	0.853
7.	Percent relative accuracy: (based on applicable standard)	1.18	1.23

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

B. Cylinder gas audit (CGA) for H₂S (ppm): (Not Applicable this quarter)

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater H₂S CMS

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B036

<i>CEMS Manufacturer:</i> Siemens	<i>Model #:</i> Maxim II	<i>CEMS Serial #:</i> 30029994471080
<i>CEMS type:</i> Hydrogen Sulfide	<i>CEMS sampling location:</i> Reformer 3 Heater Fuel Gas	
<i>CEMS span values as per the applicable regulation:</i>		
	<u>PPM</u>	<u>Percent</u>
SO₂		O₂
H₂S	300	CO₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for:

		Vivicom	PI
1.	Date of audit:	1/25/2022	1/25/2022
2.	Reference method (RM) used:	Method 15	Method 15
3.	Average RM value:	0.8	0.8
4.	Average CEMS value:	0.1	0.4
5.	Absolute value of mean difference:	0.7	0.5
6.	Confidence coefficient:	0.196	0.198
7.	Percent relative accuracy: (based on applicable standard)	0.53	0.40

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

B. Cylinder gas audit (CGA) for H₂S (ppm): (Not Applicable this quarter)

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - East Flare H₂S CMS

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P003

<i>CEMS Manufacturer:</i> Siemens	<i>Model #:</i> Maxim II	<i>CEMS Serial #:</i> 30050531960100	
<i>CEMS type:</i> Hydrogen Sulfide	<i>CEMS sampling location:</i> East Flare		
<i>CEMS span values as per the applicable regulation:</i>			
	<u>PPM</u>		<u>Percent</u>
SO₂		O₂	
H₂S	300	CO₂	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for:

		Vivicom	PI
1.	Date of audit:	1/26/2022	1/26/2022
2.	Reference method (RM) used:	Method 15	Method 15
3.	Average RM value:	0.9	0.9
4.	Average CEMS value:	0.3	0.3
5.	Absolute value of mean difference:	0.6	0.5
6.	Confidence coefficient:	0.182	0.232
7.	Percent relative accuracy: (based on applicable standard)	0.47	0.47

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

B. Cylinder gas audit (CGA) for H₂S (ppm): (Not Applicable this quarter)

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - West Flare H₂S CMS

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P004

<i>CEMS Manufacturer:</i> Siemens	<i>Model #:</i> Maxim II	<i>CEMS Serial #:</i> 30050531960400	
<i>CEMS type:</i> Hydrogen Sulfide	<i>CEMS sampling location:</i> West Flare		
<i>CEMS span values as per the applicable regulation:</i>			
	<u>PPM</u>		<u>Percent</u>
SO₂		O₂	
H₂S	300	CO₂	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for:

		Vivicom	PI
1.	Date of audit:	1/27/2022	1/27/2022
2.	Reference method (RM) used:	Method 15	Method 15
3.	Average RM value:	0.8	0.8
4.	Average CEMS value:	0.8	0.8
5.	Absolute value of mean difference:	0.0	0.1
6.	Confidence coefficient:	0.255	0.320
7.	Percent relative accuracy: (based on applicable standard)	0.17	0.23

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

B. Cylinder gas audit (CGA) for H₂S (ppm): (Not Applicable this quarter)

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - East Flare TS CMS

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P003

<i>CEMS Manufacturer:</i> ThermoFisher	<i>Model #:</i> Sola II	<i>CEMS Serial #:</i> SL-10430115	
<i>CEMS type:</i> Total Sulfur	<i>CEMS sampling location:</i> East Flare		
<i>CEMS span values as per the applicable regulation:</i>			
	<u>PPM</u>		
TS (low)	3,500		
TS (high)	350,000		

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

	TS Low		TS High	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	1/19/2022	1/19/2022	1/19/2022	1/19/2022
2. Cylinder ID number	CC427785	CC269487	CC121778	AA073391
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	3/13/2019	4/27/2021	3/18/2019	3/7/2019
Expiration date	3/13/2022	4/27/2024	3/18/2027	3/7/2027
4. Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol
5. Certified audit value	884.0	1,931	87,110	192,500
6. CEMS response values	868.6	1,838	87,666	189,748
	869.7	1,828	87,647	189,282
	872.4	1,827	87,773	189,373
Average	870.2	1,831.0	87,695	189,468
7. Accuracy	-1.56%	-5.18%	0.67%	-1.58%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - West Flare TS CMS

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P004

<i>CEMS Manufacturer:</i> ThermoFisher	<i>Model #:</i> Sola II	<i>CEMS Serial #:</i> SL-10440115	
<i>CEMS type:</i> Total Sulfur	<i>CEMS sampling location:</i> West Flare		
<i>CEMS span values as per the applicable regulation:</i>			
	<u>PPM</u>		
TS (low)	3,500		
TS (high)	350,000		

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

	TS Low		TS High	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	1/21/2022	1/21/2022	1/21/2022	1/21/2022
2. Cylinder ID number	CC315721	CC89159	CC62361	SX28981
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	3/13/2019	12/22/2020	3/18/2019	3/7/2019
Expiration date	3/13/2022	12/22/2023	3/18/2027	3/7/2027
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	884.3	1,968.0	86,970	192,500
6. CEMS response values	900.9	1,997.1	89,510	191,756
	905.7	2,004.1	89,184	191,700
	906.2	2,013.6	89,549	191,805
Average	904.3	2,004.9	89,414	191,754
7. Accuracy	2.26%	1.88%	2.81%	-0.39%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

1. Out-of-control periods.
a. Dates: None

- b. Number of days: NA
- 2. Corrective action taken: NA
- 3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater NO_x/O₂ CEM

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B036

O ₂ CEMS Manufacturer: ABB	Model #: MAGNOS 106	CEMS Serial # 3.340932.7
NO _x CEMS Manufacturer: ABB	Model #: LIMAS 11	CEMS Serial # 3.340287.1
CEMS sampling location: Reformer 3 Heater stack		
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO ₂		25
NO _x	200	CO ₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for O₂ (%) and NO_x (ppm):

	O ₂ (%)		NO _x (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	2/1/2022	2/1/2022	2/1/2022	2/1/2022
2. Cylinder ID number	CC278207	BLM000740	BLM004296	LL10026
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	11/20/2017	10/4/2021	6/25/2020	11/12/2019
Expiration date	11/20/2025	10/4/2029	6/25/2028	11/12/2027
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.97	14.09	54.81	117.20
6. CEMS response values	5.96	14.00	53.73	115.71
	6.04	14.03	54.85	116.01
	6.05	14.03	54.95	115.83
Average	6.02	14.02	54.51	115.85
7. Accuracy	0.84%	-0.50%	-0.55%	-1.15%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods: None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – East Alstom Boiler NO_x/O₂ CEM

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B034

O ₂ CEMS Manufacturer: ABB	Model #: MAGNOS 106	CEMS Serial # 00400003357006
NO _x CEMS Manufacturer: ABB	Model #: LIMAS 11	CEMS Serial # 00400003362206
CEMS sampling location: East Alstom Boiler stack		
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO₂		20.0
NO_x	100	CO₂

- I. **Accuracy assessment results** (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for O₂ (% by vol. db) :

		Vivicom	PI
1.	Date of audit:	3/17/2022	3/17/2022
2.	Reference method (RM) used:	Method 3A	Method 3A
3.	Average RM value:	4.211	4.211
4.	Average CEMS value:	4.225	4.222
5.	Absolute value of mean difference:	0.014	0.011
6.	Confidence coefficient:	0.023	0.026
7.	Percent relative accuracy (based on RM values):	0.89	0.87

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

Relative accuracy test audit (RATA) for NO_x (ppmv db):

		Vivicom	PI
1.	Date of audit:	3/17/2022	3/17/2022
2.	Reference method (RM) used:	Method 7E	Method 7E
3.	Average RM value:	20.389	20.389
4.	Average CEMS value:	20.891	20.856
5.	Absolute value of mean difference:	.503	0.467
6.	Confidence coefficient:	0.050	0.086
7.	Percent relative accuracy (based on RM values):	2.71	2.71

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

Relative accuracy test audit (RATA) for NO_x Emission Rate (lb/MMBTU):

		Vivicom
1.	Date of audit:	3/17/2022
2.	Reference method (RM) used:	Method 7E
3.	Average RM value:	0.027
4.	Average CEMS value:	0.027
5.	Absolute value of mean difference:	0.000
6.	Confidence coefficient:	0.000
7.	Percent relative accuracy (based on RM values):	0.0

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

B. Cylinder gas audit (CGA) for O₂ (%):

	O ₂		
	Audit #1	Audit #2	Audit #3
1. Date of audit	2/22/2022	2/22/2022	2/22/2022
2. Cylinder ID number	BLM005117	SG9115771ALC	CC469807
Vendor	Airgas	Airgas	Airgas
3. Date of certification	5/22/2020	11/16/2017	2/24/2020
Expiration date	5/22/2028	11/16/2025	2/24/2028
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.55	11.04	17.63
6. CEMS response values	5.39	10.85	17.36
	5.41	10.85	17.36
	5.41	10.86	17.36
Average:	5.40	10.85	17.36
7. Accuracy	-2.70%	-1.72%	-1.53%

Cylinder gas audit (CGA) for NO_x (ppm):

	NO _x		
	Audit #1	Audit #2	Audit #3
1. Date of audit	2/22/2022	2/22/2022	2/22/2022
2. Cylinder ID number	LL84223	SG917946CAL	CC70039
Vendor	Airgas	Airgas	Airgas
3. Date of certification	12/14/2021	6/25/2020	1/3/2022
Expiration date	12/14/2024	6/25/2028	1/3/2030
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	25.00	54.91	91.10
6. CEMS response values	25.26	55.26	91.26
	25.60	55.72	90.98
	25.46	55.44	90.97
Average:	25.44	55.47	91.07
7. Accuracy	1.76%	1.02%	-0.03%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)**D. Corrective action for excessive inaccuracy.**

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – West Alstom Boiler NO_x/O₂ CEM

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B035

O ₂ CEMS Manufacturer: ABB	Model #: MAGNOS 106	CEMS Serial # 00400003354606
NO _x CEMS Manufacturer: ABB	Model #: LIMAS 11	CEMS Serial # 00400003361106
CEMS sampling location: West Alstom Boiler stack		
CEMS span values as per the applicable regulation:		
	PPM	Percent
SO₂		20.0
NO_x	100	CO₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for O₂ (% by vol. db) :

		Vivicom	PI
1.	Date of audit:	3/16/2022	3/16/2022
2.	Reference method (RM) used:	Method 3A	Method 3A
3.	Average RM value:	3.789	3.789
4.	Average CEMS value:	3.829	3.811
5.	Absolute value of mean difference:	0.040	0.022
6.	Confidence coefficient:	0.022	0.034
7.	Percent relative accuracy (based on RM values):	1.65	1.48

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

Relative accuracy test audit (RATA) for NO_x (ppmv db):

		Vivicom	PI
1.	Date of audit:	3/16/2022	3/16/2022
2.	Reference method (RM) used:	Method 7E	Method 7E
3.	Average RM value:	21.189	21.178
4.	Average CEMS value:	21.964	21.944
5.	Absolute value of mean difference:	0.776	0.767
6.	Confidence coefficient:	0.553	0.541
7.	Percent relative accuracy (based on RM values):	6.27	6.17

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

Relative accuracy test audit (RATA) for NO_x Emission Rate (lb/MMBtu):

		Vivicom
1.	Date of audit:	3/16/2022
2.	Reference method (RM) used:	Method 7E
3.	Average RM value:	0.028
4.	Average CEMS value:	0.028
5.	Absolute value of mean difference:	0.000
6.	Confidence coefficient:	0.001
7.	Percent relative accuracy (based on RM values):	4.16

8. EPA performance audit results:	Point (1)	Point (2)
a. Audit lot number		
b. Audit sample number		
c. Results		
d. Actual value* (mg/dsm ³)		
e. Relative error*		

*To be completed by the Agency

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%):

	O ₂		
	Audit #1	Audit #2	Audit #3
1. Date of audit	2/22/2022	2/22/2022	2/22/2022
2. Cylinder ID number	BLM005117	SG9115771ALC	CC469807
Vendor	Airgas	Airgas	Airgas
3. Date of certification	5/22/2020	11/16/2017	2/24/2020
Expiration date	5/22/2028	11/16/2025	2/24/2028
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.514	11.04	17.63
6. CEMS response values	5.41	10.89	17.42
	5.42	10.90	17.43
	5.43	10.90	17.43
Average:	5.42	10.90	17.43
7. Accuracy	-1.70%	-1.27%	-1.13%

Cylinder gas audit (CGA) for NO_x (ppm):

	NO _x		
	Audit #1	Audit #2	Audit #3
1. Date of audit	2/25/2022	2/25/2022	2/25/2022
2. Cylinder ID number	LL84223	SG917946CAL	CC70039
Vendor	Airgas	Airgas	Airgas
3. Date of certification	12/14/2021	6/25/2020	1/3/2022
Expiration date	12/14/2024	6/25/2028	1/3/2030
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	25	54.91	91.1
6. CEMS response values	25.31	55.31	90.91
	26.06	54.99	91.33
	24.76	55.51	90.44
Average:	25.38	55.27	90.89
7. Accuracy	1.52%	0.66%	-0.23%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)**D. Corrective action for excessive inaccuracy.**

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – FCC/CO Boiler SO₂/NO_x/CO/O₂ CEM

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P007

O ₂ CEMS Manufacturer: ABB	Model #: Magnos 106	CEMS Serial # 3.340569.7
SO ₂ CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.340641.7
NO _x CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.340641.7
CO CEMS Manufacturer: ABB Automation	Model #: URAS- 26	CEMS Serial # 3.347698.3
CEMS sampling location: CO Boiler stack		
CEMS span values as per the applicable regulation:		
SO ₂	400 PPM	O ₂ 10.0 %
NO _x	350 PPM	CO 1000 PPM

- I. **Accuracy assessment results** (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ (percent)		SO ₂ (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	1/26/2022	1/26/2022	1/26/2022	1/26/2022
2. Cylinder ID number	ALM001730	CC423357	ALM001730	CC423357
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	2/14/2017	2/14/2017	2/14/2017	2/14/2017
Expiration date	2/14/2025	2/14/2025	2/14/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	2.49	5.53	98.98	219.40
6. CEMS response values	2.52	5.52	92.73	215.57
	2.52	5.52	97.60	218.86
	2.52	5.52	98.68	220.02
Average	2.52	5.52	96.34	218.15
7. Accuracy	1.20%	-0.18%	-2.67%	-0.57%

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

	NO _x (ppm)		CO (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	1/26/2022	1/26/2022	1/26/2022	1/26/2022
2. Cylinder ID number	XC030834B	CC222300	XC030834B	CC222300
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	2/14/2017	2/14/2017	2/14/2017	2/14/2017
Expiration date	2/14/2025	2/14/2025	2/14/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	80.86	187.80	249.50	551.00
6. CEMS response values	77.76	183.95	250.77	552.98
	79.44	184.17	251.49	553.52
	79.63	183.89	251.65	553.90
Average	78.94	184.00	251.30	553.47
7. Accuracy	-2.37%	-2.02%	0.72%	0.45%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)**D. Corrective action for excessive inaccuracy.**

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – FCC Regen Line SO₂/NO_x/CO/O₂/CO₂ CEM

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P007

SO ₂ CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.240685.3
NO _x CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.240682.3
CO CEMS Manufacturer: ABB	Model #: URAS 14	CEMS Serial # 3.240684.3
O ₂ CEMS Manufacturer: ABB	Model #: Magnos 206	CEMS Serial # 01400101195301
CO ₂ CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.240682.3
CEMS sampling location: FCC Regen Line stack		
CEMS span values as per the applicable regulation:		
SO ₂	500 PPM	O ₂ 25.0 %
NO _x	200 PPM	CO 1000 PPM
CO ₂	50.0 %	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA): (Not applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ (percent)		SO ₂ (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	2/3/2022	2/3/2022	2/3/2022	2/3/2022
2. Cylinder ID number	XL001104B	BLM004046	CC443275	CC82139
Vendor	Airgas	Scott	Airgas	Airgas
3. Date of certification	11/20/2017	11/19/2015	11/21/2017	11/21/2017
Expiration date	11/20/2025	11/20/2023	11/21/2025	11/21/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.49	13.90	130.70	267.60
6. CEMS response values	5.60	13.93	132.33	275.23
	5.45	14.05	135.25	277.21
	5.44	14.08	136.12	278.09
Average	5.50	14.02	134.57	276.84
7. Accuracy	0.18%	0.86%	2.96%	3.45%

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

	NO _x (ppm)		CO (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	2/3/2022	2/3/2022	2/3/2022	2/3/2022
2. Cylinder ID number	LL34302	BAL3120	XL002639B	BLM004600
Vendor	Airgas	Air Liquide	Airgas	Airgas
3. Date of certification	11/21/2017	8/12/2014	11/6/2017	10/27/2021
Expiration date	11/21/2025	8/13/2022	11/6/2025	10/27/2029
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	54.90	116.00	277.60	547.50
6. CEMS response values	55.77	116.41	280.49	542.59
	56.83	116.45	280.74	542.98
	56.95	116.86	280.98	543.02
Average	56.52	116.57	280.74	542.86
7. Accuracy	2.95%	0.49%	1.13%	-0.85%

B. Cylinder gas audit (CGA) for CO₂ (ppm):

	CO ₂ (ppm)	
	Audit #1	Audit #2
1. Date of audit	2/3/2022	2/3/2022
2. Cylinder ID number	ALM063125	CC472694
Vendor	Scott	Scott
3. Date of certification	9/24/2018	9/24/2018
Expiration date	9/24/2026	9/24/2026
4. Type of certification	RATA Class	RATA Class
5. Certified audit value	13.11	27.20
6. CEMS response values	13.47	27.29
	13.57	27.35
	13.61	27.38
Average	13.55	27.34
7. Accuracy	3.36%	0.51%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)**D. Corrective action for excessive inaccuracy.**

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit (SRU #1) SO₂/O₂ CEM

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P009

SO ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZB-919SP-10541-1
O ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZB-919SP-10541-1
CEMS sampling location: SRU Thermal Oxidizer		
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO₂	500	O₂ 10.0
NO_x		CO₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O₂ percent		SO₂ ppm	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	1/25/2022	1/25/2022	1/25/2022	1/25/2022
2. Cylinder ID number	ALM028323	CC13867	XC006260B	ALM004131
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	9/13/2016	11/20/2017	2/24/2017	2/14/2017
Expiration date	9/13/2024	11/20/2025	2/24/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol
5. Certified audit value	2.52	5.98	124.00	268.70
6. CEMS response values	2.57	5.97	128.45	270.82
	2.58	5.98	129.36	275.25
	2.57	5.98	129.97	275.55
Average	2.57	5.98	129.26	273.87
7. Accuracy	1.98%	0.00%	4.24%	1.92%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit #2 and #3 (TRP SRU) SO₂/O₂ CEM

Period ending date: March 31 **Year:** 2022
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P037

SO ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZX-919-10814-1
O ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZX-919-10814-1
CEMS sampling location: TGT #2 Thermal Oxidizer stack		
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO₂	500	O₂ 10.0
NO_x		CO₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O₂ percent		SO₂ ppm	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	1/25/2022	1/25/2022	1/25/2022	1/25/2022
2. Cylinder ID number	ALM028323	CC13867	XC006260B	ALM004131
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	9/13/2016	11/20/2017	2/24/2017	2/14/2017
Expiration date	9/13/2024	11/20/2025	2/24/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol
5. Certified audit value	2.52	5.98	124.00	268.70
6. CEMS response values	2.47	5.96	120.51	262.73
	2.48	5.96	124.33	263.95
	2.49	5.96	124.33	265.02
Average	2.48	5.96	123.06	263.90
7. Accuracy	-1.59%	-0.33%	-0.76%	-1.79%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Table B1 - Calibration Drift Assessment; Out-of-Control Periods for Part 60

CEMS	Start Time	End Time	Hours	Corrective Action Taken
COB CO	1/5/2022 9:00	1/5/2022 11:00	2	Cylinder gas was not available for calibration. A two hour grace period is considered for the daily validation issue on the basis that the validation was missed due to an issue with the calibration gas. Time outside of the grace period is considered OOC. Corrected calibration gas issue, recalibrated, and returned to service.
COB NOx	1/5/2022 9:00	1/5/2022 11:00	2	Cylinder gas was not available for calibration. A two hour grace period is considered for the daily validation issue on the basis that the validation was missed due to an issue with the calibration gas. Time outside of the grace period is considered OOC. Corrected calibration gas issue, recalibrated, and returned to service.
COB SO2	1/5/2022 9:00	1/5/2022 11:00	2	Cylinder gas was not available for calibration. A two hour grace period is considered for the daily validation issue on the basis that the validation was missed due to an issue with the calibration gas. Time outside of the grace period is considered OOC. Corrected calibration gas issue, recalibrated, and returned to service.
TRP SO2	1/28/2022 7:00	1/29/2022 17:00	34	Recalibrated and Returned Analyzer to service.
TRP SO2	1/30/2022 10:00	1/31/2022 9:00	23	Recalibrated and Returned Analyzer to service.
EF TS	1/28/2022 10:00	1/29/2022 10:00	24	Power switch at the analyzer building was shutoff. Power was returned to the analyzer and a calibration was completed.
EF TS	1/31/2022 8:00	2/1/2022 10:00	26	Analyzer sample heater cell failed. Replaced the sample heater, recalibrated, and returned to service.
WF TS	3/25/2022 7:00	3/26/2022 15:00	32	Sample line had liquid carryover. Sample line was cleared and dried before the analyzer was recalibrated and returned to service.
EF H2S	3/25/2022 7:00	3/26/2022 15:00	32	Sample exhaust tubing was plugged. Tubing was replaced and analyzer was calibrated and returned to service.

Table B2 – Calibration Drift Assessment; Out-of-Control Periods for Part 63

CEMS	Start Time	End Time	Hours	Corrective Action Taken
COB CO	1/5/2022 9:00	1/5/2022 11:00	2	Cylinder gas was not available for calibration. A two hour grace period is considered for the daily validation issue on the basis that the validation was missed due to an issue with the calibration gas. Time outside of the grace period is considered OOC. Corrected calibration gas issue, recalibrated, and returned to service.
TRP SO2	1/28/2022 7:00	1/29/2022 17:00	34	Recalibrated and Returned Analyzer to service.
TRP SO2	1/30/2022 7:00	1/30/2022 10:00	3	Recalibrated and Returned Analyzer to service.
TRP SO2	1/30/2022 10:00	1/31/2022 9:00	23	Recalibrated and Returned Analyzer to service.
TRP SO2	2/2/2022 7:00	2/2/2022 9:00	2	Recalibrated and Returned Analyzer to service.
TRP SO2	2/1/2022 7:00	2/1/2022 9:00	2	Recalibrated and Returned Analyzer to service.

Per 40 CFR Part 63.8(c)(7)(i), a CMS is out of control if the zero, mid-level, or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard. These instances are reported in Table B2 above.